IN THE CLAIMS:

1. (Currently amended) A method of delivering a nucleic acid of interest to a primary human chondrocyte, comprising:

providing a recombinant chimeric adenovirus having a tropism for primary human chondrocytes, said recombinant chimeric adenovirus comprising:

a nucleic acid of interest operatively linked to a promoter, wherein said nucleic acid of interest encodes at least one amino acid sequence that inhibits cartilage disease progression, at least one amino acid sequence that counteracts the loss of cartilage, or a combination thereof;

a deletion in a gene encoding a fiber protein; and

a nucleic acid replacing the deletion in the gene of the fiber protein, said nucleic acid encoding at least a part of a fiber protein of a B-type adenovirus;

wherein said at least a part of the fiber protein of the B-type adenovirus has a tropism for primary human chondrocytes; and

infecting a primary human chondrocyte in vitro with said recombinant chimeric adenovirus, such that said nucleic acid of interest is delivered to said primary human chondrocyte.

2-4. Canceled.

5. (Previously presented) The method of claim 1, wherein said B-type adenovirus is adenovirus type 35.

6. (Previously presented) The method of claim 1, wherein said recombinant chimeric adenovirus comprises an adenovirus 5 nucleic acid sequence.

7. (Previously presented) The method of claim 5, wherein said recombinant chimeric adenovirus comprises an adenovirus 5 genome.

8. (Previously presented) The method of claim 1, wherein said recombinant chimeric adenovirus comprises at least one deletion in the E3 region where the nucleic acid of interest is inserted or can be inserted.

9-23. Canceled

24. (Currently amended) ~~Chondrocytes~~ In vitro chondrocytes provided with an additional nucleic acid encoding:

at least one amino acid sequence that inhibits cartilage disease progression;

at least one amino acid sequence that counteracts the loss of cartilage; or

a combination thereof;

said additional nucleic acid provided by a gene delivery vehicle comprising a recombinant chimeric adenovirus having a tropism for chondrocytes;

said recombinant chimeric adenovirus comprising:

a deletion in a gene encoding a fiber protein; and

a nucleic acid replacing the deletion in the gene encoding the fiber protein, said nucleic acid encoding at least a part of a fiber protein of a B-type adenovirus;

wherein said at least a part of the fiber protein of the B-type adenovirus has a tropism for primary human chondroctyes.

25. (Currently amended) The in vitro chondrocytes of claim 24, wherein said additional nucleic acid encodes at least one member of the family of bone morphogenesis proteins.

26. Canceled.

27. (Currently amended) A method of inhibiting cartilage disease progression comprising:

preparing a recombinant chimeric adenovirus having a tropism for primary human chondrocytes, said recombinant chimeric adenovirus including:

a nucleic acid encoding a protein useful in inhibiting cartilage disease progression operatively linked to a promoter;

a deletion in a gene encoding a fiber protein; and

a nucleic acid replacing the deletion in the gene encoding the fiber protein, said nucleic acid encoding at least a part of a fiber protein of a B-type adenovirus;

wherein said at least a part of the fiber protein of the B-type adenovirus has a tropism for primary human chondrocytes; and

infecting a primary human chondrocyte in vitro with said recombinant chimeric adenovirus, such that said nucleic acid of interest encoding the protein useful in inhibiting cartilage disease progression is expressed in said primary human chondrocyte, inhibiting cartilage disease progression.

28. (Currently amended) A method of repairing cartilage comprising:

preparing a recombinant chimeric adenovirus having a tropism for primary human chondrocytes, said recombinant chimeric adenovirus including:

a nucleic acid encoding a protein useful in repairing cartilage operatively linked to a promoter;

a deletion in a gene encoding a fiber protein; and

a nucleic acid replacing the deletion in the gene encoding the fiber protein, said nucleic acid encoding at least a part of a fiber protein of a B-type adenovirus;

wherein said at least a part of the fiber protein of the B-type adenovirus has a tropism for primary human chondrocytes; and

infecting a primary human chondrocyte in vitro with said recombinant adenovirus, such that said nucleic acid encoding the protein useful in repairing cartilage is expressed in said primary human chondrocyte, effecting the cartilage repair.

29. (New) A method of delivering a nucleic acid of interest to a primary human chondrocyte, comprising:

providing a recombinant chimeric adenovirus having a tropism for primary human chondrocytes, said chimeric recombinant adenovirus comprising:

a nucleic acid of interest operatively linked to a promoter, wherein said nucleic acid of interest encodes at least one member of the family of bone morphogenesis proteins;

a deletion in a gene encoding a fiber protein; and

a nucleic acid replacing the deletion in the gene of the fiber protein, said nucleic acid encoding at least a part of the fiber protein of a B-type adenovirus, wherein said at least a part of the fiber protein of the B-type adenovirus has a tropism for primary human chondrocytes; and

infecting a primary human chondrocyte in vitro with said recombinant chimeric adenovirus, such that said nucleic acid of interest is delivered to said primary human chondrocyte.

30. (New) In a method of infecting a cell with an adenoviral vector having a recombinant fiber protein comprising a part of a fiber protein originating from an Ad5 fiber protein and an adenoviral genome, the improvement comprising:

wherein a part of the recombinant fiber protein originates from a B-type adenovirus fiber protein, thus providing the recombinant fiber protein with a tissue tropism for primary human chondrocytes; and

the adenoviral genome further comprises a nucleic acid of interest operatively linked to a promoter, wherein the nucleic acid of interest encodes at least one amino acid sequence that inhibits cartilage disease progression, at least one amino acid sequence that counteracts the loss of cartilage, or a combination thereof.